

DEPARTMENT OF TRANSPORTATION - District 4 Toll Bridge Program

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September 11, 2007

Contract No. 04-0120F4
04-SF-80-13.2 / 13.9
Self-Anchored Suspension Bridge
Letter No. 05.03.01-000551

Michael Flowers
Project Executive
American Bridge/Fluor Enterprises, a JV
375 Burma Road
Oakland, CA 94607

Dear Michael Flowers,

Project Schedule Revision for August 2007

The Department has completed review of Submittal ABF-SUB-000269R00, "Project Schedule Monthly Update No. 11," dated August 24, 2007 with a data date of August 20, 2007.

The Department understands that the schedule submitted is essentially contemporaneous. Many of the details on the "Road to Fabrication" as well as the Temporary Tower fabrication and construction changes are included. However, it is understood that ABF anticipates additional changes from ZPMC and the Temporary Tower subcontractors. As discussed during our weekly meetings, all future schedule revisions are to be submitted or discussed and agreed upon by the Department prior to their implementation into the schedule. The following comments are provided to assist ABF in achieving the objective of creating and maintaining a project schedule reflecting the planned sequence and logic to accomplish the work.

This schedule revision is accepted as noted as ABF's current plan to complete the work. Comments concerning the August 20, 2007 schedule revision are listed below. It is important to note that this review is not comprehensive and that the schedule revision includes the following major changes from the last schedule submission.

- 460 added new activities
- 175 added as-built activities
- 282 activities with changed descriptions
- 338 deleted activity codes
- 1,574 modified activity codes
- 14,726 added activity codes
- 131 modified original durations
- 125 added expected finish dates
- 247 activities performed out of sequence

It is important to point out these major schedule revisions have shifted the critical path from the OBG weld trials back to the Shear Leg Barge fabrication and commissioning. An update of the of

the July schedule submission would have shown the Project to be approximately 45 days behind schedule. Instead the August Revised Schedule shows the Project is 29 days ahead of schedule (a net result of ~74 day shift in the critical path).

A PROJECT AND SCHEDULE STATUS

A1. Numbers 1.2, 1.3 & 1.4: There are still a number of minor issues with PMIV that are currently being reviewed.

A2. Number 1.4.4: As previously discussed, provide a "Status" column next to each of the "Outstanding CCOs issued with Authority to Proceed."

A3. Number 1.4.5.1: The CCO logic ties will be discussed during the weekly schedule meeting or at a separately scheduled meeting to address the incorporation of CCO's into the schedule. Change order work that has commenced should be reflected in the schedule with the appropriate logic ties.

A4. Number 1.4.5.2: CCO 019 - Time Impact Analyses (TIA No. 1) is under review. The Department is waiting for additional supporting information. However, it is noted that some of the logic ties associated with the check and stamp activities have been revised.

A5. Number 1.4.5.3: The Department has responded to ABF's protest of CCO 038 (Reference State letter 05.03.01-000501).

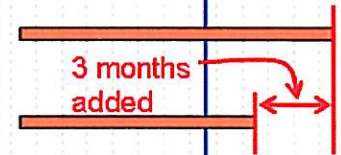
A6. Number 1.4.5.4: Provide a schedule fragnet showing all logical ties to the activities affected by CCO 031-S1, Tower Riser Pipe Support, for review and eventual inclusion into the schedule.

A7. Number 1.5.2: It is noted that an additional 38 days was added to activity PGFAB000420, *"Install Crane on Shearleg Crane Barge & Deliver to SFOBB."* The original duration of this activity has significantly changed from the Baseline schedule. Provide the reason and/or backup for these original duration changes. As previously agreed, activities with durations greater than 20 days that are within 6 months of the data shall be revised to a level of effort and more detail provided.

A8. Number 1.6.1: The Department understands that the Lift 7 OBG Accelerated Working Drawings and the Shear Leg Barge fabrication are on parallel critical paths. However, the Shear Leg Crane Barge fabrication and commissioning are critical activities on the Project. The narrative does not explain the significance of the shift in critical paths from the weld trials to the Shear Leg Barge fabrication. Changes in original durations, revised logic ties and other schedule manipulations were implemented to revise the critical path of the Project, including extended durations for preparation of Lift 7 drawings. The narrative, as submitted, is lacking this significant discussion. Provide your basis and background data for making these major revisions to the critical path (reference the schedule clip below).

Activity ID	Activity Name	OD	AD	RD	TD	TF	Phys % Comp	Dur % Comp	2007														
									J	D	J	F	M	A	M	J	Ju	A	S	O	N	D	J
▣	SAS Project - Update 11 dd 08/20/07 rev 0	62	178	88	266	23		0%															
	BDSUB002515 Prepare AWD - Detailing - Plate Sub Assembly - BG Lifts 7E, 7W, 8E, 8W - Pkg 33	59	173	85	258	21	95%	0%															
▣	SAS Project - Update 10 dd 07/20/07 rev 0	62	157	41	198	60		33.87%															
	BDSUB002515 Prepare AWD - Detailing - Plate Sub Assembly - BG Lifts 7E, 7W, 8E, 8W - Pkg 33	59	152	40	192	58	50%	32.2%															

3 months added



- A9. **Number 1.7.1.1:** The activity number TTSUBBH0051 does not exist. The activity description appears to fit activity TTMOBBH0051. Verify and correct this activity number.
- A10. **Number 1.7.3.1:** The required time line for submission of form CEM-6201B has expired. Based upon recent discussions, the Department understands that NOPC 3 will no longer be pursued by ABF. This issue is considered closed.
- A11. **Number 1.8:** The Department notes the major changes in logic, durations and out of sequence work that has reduced the overall Project duration by 30 days. As previously stated, an update of the July schedule submission would have shown the Project to be approximately 45 days behind schedule instead of the 29 days ahead of schedule shown on the August schedule submission (a net result of ~74 day shift of the critical path). In addition, the predecessor activities to the 247 activities that were performed out of sequence could negatively effect the end dates of the Project. When scheduling the Project using the original retained logic, it is approximately 30 days behind schedule.
- A12. **Number 1.9:** The Department's comments to ABF-CAL-LTR-000267 were discussed at the August 29, 2007 Weekly Schedule Meeting.
- A13. There are numerous activities that contain lag relationships. The use of these relationships creates difficulties in monitoring and tracking progress. Many Finish to Start lag relationships should represent activities. It is preferred that the lags are replaced with task activities and the use of lags minimized. Refer to the attached lag report on the main schedule (ABF.U11.R0.070820 SAS Project - Update 11 dd 08/20/07 rev 0) for a list of activities with lag greater than 5 days. (LagReport_MainSchedule_greaterthan5d.pdf)
- A14. There are twenty-three (23) LAG relationships in excess of 5 days related to RFI's. It has been agreed with ABF in weekly schedule meetings that such LAG's will be replaced with task activities or a detailed explanation provided. The next schedule submission needs to reflect this agreement. As previously stated in past narrative correspondence, the project schedule will be run without the influence of the RFI schedule. RFI relationship ties and their influence to the update schedule will only be evaluated if a TIA is submitted. Refer to the attached lag report on the RFI schedule (ABF.U11.RFI-R0 SAS Project - RFI As-Built dd 08/20/07 rev 0) for a list of RFI activities with lag greater than 5 days. (LagReport_RFISchedule.pdf)
- A15. There are numerous activities in the schedule with durations greater than 20 days. As agreed during our weekly schedule meetings, activities with durations greater than 20 days starting within six months of the data date should be broken down into more detailed activities with

appropriate durations. The activities of particular concern are attached. Modify the activity type to a level of effort and provide additional details of the summary activities.

(Durations_Greater_20days.pdf)

- A16. The Attachment (ABF-SUB-000269-08 DOCUMENT STATUS UPDATE NO. 11r0.pdf) shows that there are numerous submittal activities that have been actualized without a submittal number in the "Submittal Number" activity code. The "Submittal Number" activity code should be populated for submittal activities with actual dates. A distinct code such as "Mulit" or "See Notes" should be used for submittal activities that are comprised of multiple submittal numbers.

B AREA SPECIFIC DETAIL – W2 CAP BEAM

B1.Number 2.3.1: It does not appear that any activities were added. It is unclear why this statement is made.

C AREA SPECIFIC DETAIL – TEMPORARY TOWERS

C1.Number 3.2.2.1: It is the Departments understanding that the potential increased weight in OBG is being reviewed. It is premature to include this preliminary information in the "*Description of current problem areas/Anticipated Delays*" section of this report.

C2.Number 3.3.1: It is noted that 7 activities were added.

C3.Numbers 3.3.2 and 3.3.4: The description, "*Completed updates under*" is extremely vague and does little to describe the "*Changes in Construction sequence and Changes to schedule.*" Use a narrative format to describe what changes were made to the construction sequence and why they were made.

C4.Numbers 3.3.5 and 3.3.6: It is noted that the Temporary Tower fabrication and construction have been partially revised.

D AREA SPECIFIC DETAIL – OBG / BRIDGE DECK

D1.Number 4.2.1.1: The Department has responded to this issue via 05.03.01-000485, dated August 23, 2007. It is our understanding that currently no delay exists and we will be notified of any changes.

D2.Number 4.2.1.2: The Department responded to RFI 876 "PWS Cable Geometry near Pier E2" on August 24, 2007. It is premature to state that the erection of the cable is an "*anticipated delay.*"

D3.Number 4.2.1.5: It is premature to identify bolt access for pedestal lighting as an "*anticipated delay*" before a RFI has been issued.

D4.Number 4.2.1.6: ABF has indicated that 10% of the shop drawings will need to be revised and resubmitted. There have been approximately 5000 drawings submitted to date and less than 70 have redlines associated with the typical padeye revisions. These minor redline revisions should not delay the Project. ABF shall notify our office if the revisions appear to impact the Project.

D5.Number 4.2.1.7: Provide your cost and time impact analysis for the placement of any additional bolts so that appropriate mitigation can be implemented promptly.

D6.Number 4.2.1.8: It appears premature to discuss this issue before a final determination is provided by the Engineer.

D7.Number 4.2.2.1: The Contractor uses the following statement, "*ABFJV continues to evaluate the impacts.*" What impact to other activities is being evaluated? Should ABF know of any other impacts to the OBG, they should bring it to the Departments attention as soon as possible in order to mitigate these issues in a timely manner and prevent any potential impact to the project schedule.

D8.Number 4.2.3.1: Identify any potential mitigating measures that are being reviewed by ABF.

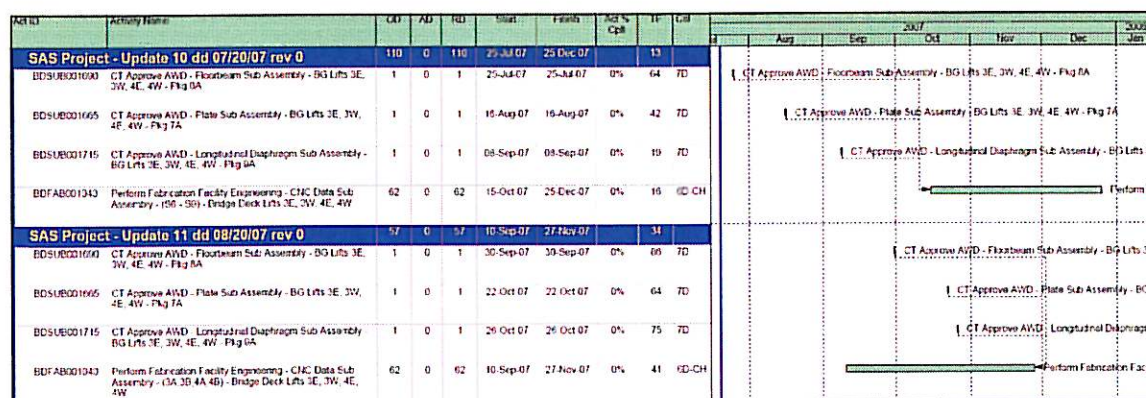
D9.Number 4.3.1: It is noted that 281 activities were added to monitor the partial and revised submittals. ABF has indicated that description of the original activity of a multiple submittal would be amended to include "LOE" and that the activity type would be changed to Level of Effort. This change has not been implemented and makes tracking durations of submittal preparation and review confusing. Review the submittal activities and revise accordingly.

D10. Number 4.3.7: Contrary to the statement made, the Original Duration for activity BDSUB001315 was not reduced to 30 days, but increased to 53 days. Verify and correct.

D11. Number 4.3.12: Contrary to the statement made, the Original duration for activity BDSUB001750 was not changed and it remains at 53 days. Verify and correct.

D12. Explain why the remaining duration of activity number BDSUB0002515 increased from the last update. In the July 2007 Schedule Revision this activity had an original duration of 59 days and was 50% complete with a remaining duration of 40 days. In the August 2007 schedule revision, this activity has progressed to 95% complete and yet the remaining duration increased to 85 days (Reference the schedule clip in section A8 of this letter).

D13. As previously discussed, the “*Perform Fabrication Facility Engineering - CNC Data...*” activities appear to have unnecessarily long durations. Some as long as 101 days. Originally these activities were scheduled to have a finish to start relationship (FS) with activities “*CT review AWD...*” The majority of the facility engineering CNC data activities can be started long before Caltrans reviews are complete. This is evidenced by recent changes in the logic of some of these types of activities (See the schedule clip below showing the revision of the FS relationships with a Finish to Finish relationship with a 20 day lag). Why are some of these relationships revised? Why not change all of these relationships to more appropriately model the work? See the schedule clip below showing a net savings of approximately 72 days on the OBG fabrication path.



E AREA SPECIFIC DETAIL – T1 TOWER

E1. **Number 5.3.1:** It is noted that 24 activities were added to monitor the partial and revised submittals. ABF has indicated that the description of the original activity of a multiple submittal would be amended to include “LOE” and that the activity type would be changed to Level of Effort. This change has not been implemented and makes tracking durations of submittal preparation and review confusing. Review the submittal activities and revise accordingly.

E2. **Number 5.3.2:** As discussed during the weekly schedule meetings, all future revisions to the project schedule will either be agreed to in advance or submitted to the Department prior to implementation.

F AREA SPECIFIC DETAIL – CABLE SYSTEM

F1. **Number 6.2.1.1:** The Cable System lighting submittal was rejected by the Department due to the lack of a Lux calculation as required by the specifications. The Department is awaiting a revised lighting submittal. Specific weekly lighting meetings are ongoing to resolve this issue and it is our understanding that this issue will be resolved without impact to the completion of the Cable System Accelerated Working Drawings.

F2. **Number 6.2.1.2:** The Department has responded to RFI 876, “*PWS Cable Geometry near Pier E2.*”

F3. **Number 6.2.2.1:** What impacts are being evaluated? If impacts to the Cable System are known, bring it to the Departments attention as soon as possible in order to mitigate these issues and prevent any potential impact to the project schedule.

G E2 CROSS BEAM
G1.No Comments

H AREA SPECIFIC DETAIL – MEP SERVICES

H1. **Numbers 8.2.1.1, 8.2.1.2, 8.2.1.3, 8.2.2.1 & 8.2.2.2:** Procedures to improve and expedite coordination efforts in the determination of MEP penetration locations and the preparation and review of shop drawings for the OBG and the T1 Tower have been implemented. These procedures include expediting resolution of RFI's and Shop Drawing reviews. Drawings that are currently being "Approved as Noted" can be released for fabrication as required. Therefore, any necessary resubmittal "for record" of final drawings should not delay the Project.

H2. **Number 8.2.1.4:** The Department is awaiting the submission of an approvable Cable Roadway Lighting fixture, as the first submission did not meet contract Specification requirements. Once the fixture is determined, the support for the fixture attachment may need to be designed. The Department does not agree that this is a "*redesign of the Cable Lighting system and attachment*" or that the situation "*is currently causing delays to the completion of the Cable shop drawings.*"

H3. **Number 8.3.1:** It is noted that 8 activities were added, including historical activities that have already been completed such as "*Prepare Mat'l/Eqmt Submittal Pkg - Light Fixtures H3 & H4.*"

Sincerely,



GARY PURSELL
Resident Engineer

cc: Don Ross
file: 05.03.01, 26.05, 26.07